REMARKS

Double Patenting

The Examiner has rejected claim 1 on a provisional basis under the doctrine of double patenting over claim 1 of copending Application No. 09/960,637. Although Applicants do not agree with the Examiner's conclusion, to advance prosecution, they are willing to file a terminal disclaimer at the appropriate time to overcome the Examiner's provisional double patent rejection.

Section 102 Rejections

The Examiner has rejected Claims 1 - 12 under Section 102 (e) as being anticipated by Adrangi (U.S. Patent No. 6,651,141).

With respect to claim 1, the Examiner asserts that:

"Adrangi teaches an edge node that received content from a network operations center (NOC) via a satellite broadcast link and distributes it to a last mile service provider, the edge node comprising:
    a. One media server capable of serving both live and non-live content (column 2, lines 39-49, a group of network servers).
    b. A private virtual local area network (VLAN) that receives content from the satellite link and distributes it to the media server (column 4, lines 29-51; column 11, lines 12-20).
    c. A public VLAN that transmits the received content from the server to a last mile server (column 2, lines 30-58; column 11, lines 12-20).
    d. Where the media server is connected to both the public and private VLANs; and where the media server, private VLAN, and public VLAN exist in a single computer (column 2, lines 30-58; column 11, lines 12-20). Note that a single computer could provide all the functions in the reference."

Applicants respectfully disagree with the Examiner's analysis of Adrangi. As stated in MPEP § 2131, "To anticipate a claim, the reference must teach every element of the claim." Adrangi's edge node does not meet this requirement.

In particular, Adrangi's edge node does not include as internal elements, a

private VLAN and a public VLAN with a connection to a satellite content distribution

network as disclosed in the currently amended claim 1 and in Applicants' specification.

Figure 7 from Applicants' specification, reproduced below, shows the structure of

Applicants' edge node. In this figure, the private VLAN is VLAN 550, and the public

VLAN is VLAN 560. As is evident in the figure, both are internal to the edge node, and

both have different accessibility. The private VLAN's only external connection is the

satellite connection via Dish 502, whereas the public VLAN can be accessed by back

channel (BC) 600 and is also connected to the last mile service provider (LMSP) via
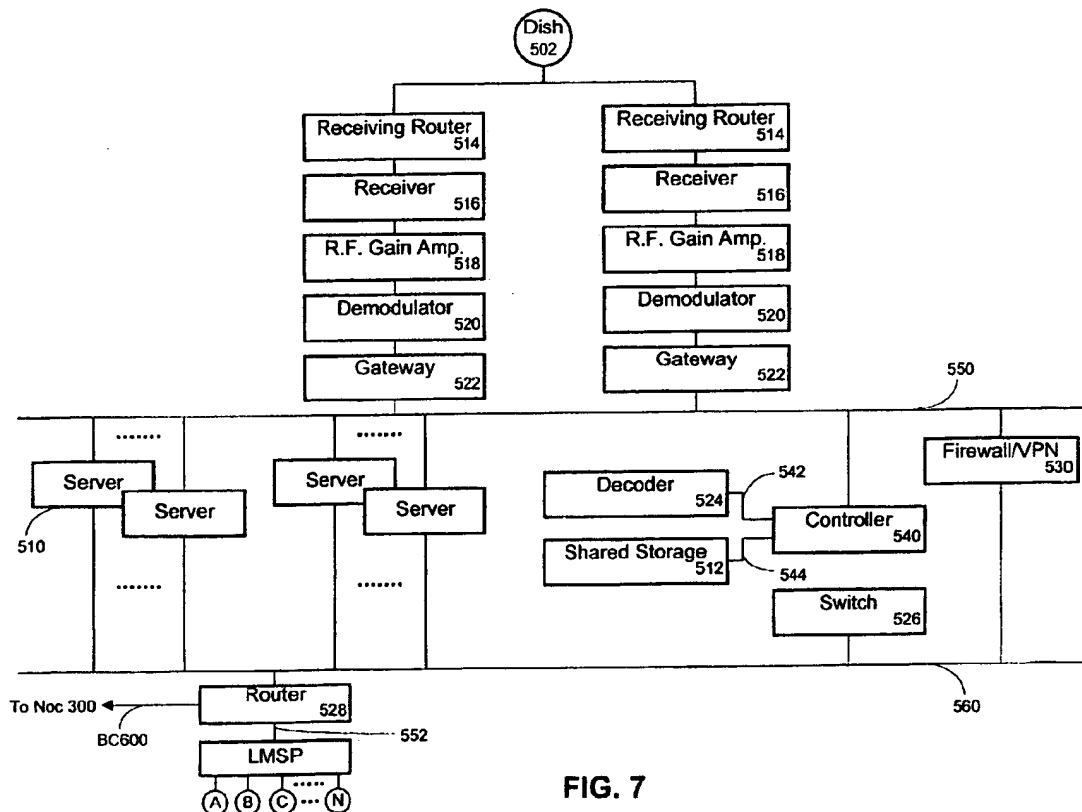
Router 528.

FIG. 7

Applicants' unique combination of a private VLAN and public VLAN as part of a single edge node serves several purposes not taught in Adrangi. First, they enable the edge node to isolate the content distributed via satellite to the edge from any content or commands transmitted from the NOC via BC 600 on a terrestrial public network and from the last mile service provider (LMSP). This isolation is a critical innovation and is used to enhance the security of the network by eliminating any possible tampering within the elements of the private VLAN which controls the edge node. Second, distributing content over a private satellite content distribution network and managing it in a private VLAN protects any proprietary data or content on the private VLAN from being copied or unauthorized access. Third, although the NOC can send commands directly to the private VLAN over the satellite link without any need for a public network, the ability to establish an internal VPN through Firewall 530 between the public VLAN and the private VLAN provides the NOC with an alternative means for controlling the edge node by a terrestrial network without compromising the security of the content. Thus the internal configuration of Applicants' edge node also enhances the operational flexibility for the NOC to manage the edge node. None of these critically important features is disclosed or was anticipated by Adrangi.

In fact, with respect to the private and public VLANs, the cited passage in Adrangi, column 4 lines 29-51 and column 2 lines 30-58, do not contain any reference to any of the terms "private VLAN", "public VLAN", "private network VPN", and "VLAN". The closest Adrangi comes is column 4, lines 49-54, which refers to the edge POPs as part of a VPN for management purposes, "Even though certain edge POP sites 230-234 are connected to the rest of the system over the Internet, the connection can be

implemented such that the edge POPs 240-245 are part of a virtual private network ("VPN") that is administered from the data centers 220-222." This description is very different from Applicants' invention because the VPN connects the edge POP with other locations, i.e. it is not an internal element of the edge POP, and a VPN is neither private VLAN nor a public VLAN.

According to the Webopedia website (**www.webopedia.com**), a VPN is "a network that is constructed by using public wires to connect nodes. For example, there are a number of systems that enable you to create networks using the Internet as the medium for transporting data. These systems use encryption and other security mechanisms to ensure that only authorized user can access the network and that the data cannot be intercepted." In short, the VPN provides a connection between two or more points on a public network that is independent of the distance between them. This is in contrast to a private VLAN which is a distinct network that is localized (virtual local area network) and physically isolated from public access thereby eliminating the need for encryption or other security to protect the flow of data internal to the private VLAN.

It bears repeating that Applicants' have used a private VLAN as one of the internal elements comprising the edge node, not as an external connection between the edge node and a network as in Adrangi's disclosure. As described on pages 28 and 29 of Applicants' specification and shown in Applicants' Figure 7 above, this internal private VLAN links the satellite receiver of the edge node with the data controller and the media servers of the edge node. It has no direct connection to a public network, and, therefore, provides secure communications among the elements of the private VLAN. This is a critical distinction that is not disclosed by Adrangi.

Additionally, Applicants' satellite connection is one-way and can't be used for communicating back to the NOC, another feature that is also significantly different from Adrangi's VPN connection between his data center and his edge POPs. There is no suggestion or motivation to modify Adrangi to have a one-way communication channel.

The above passage from Adrangi also highlights another major difference between his edge POP disclosure and Applicants' invention. In particular, Adrangi does not disclose a dedicated satellite content distribution network that, by its nature, bypasses congestion on the Internet, as stated in the currently amended preamble of Applicants' claim 1 as a satellite content distribution network and as described in Applicants' specification on pages 10 and 11. Adrangi's network connections include the Internet (see above passage) which by its public nature necessitates the use of a VPN or other technology to implement secure remote management. The private nature of the satellite content distribution network of Applicants' invention eliminates the need for a VPN to implement secure remote management of the edge nodes.

The other citation in Adrangi, col. 1 lines 12-20, does refer to a LAN, but as connecting local clients or end users to a local cache in his description of the related art, not as part of his disclosed edge node. Furthermore, this LAN has a very different topology than Applicants' public VLAN shown in the figure above. As stated in claim 1, Applicants' media server is "connected to both the public and private VLANs" and the public VLAN "transmits the content from the server to a last mile service provider." As shown in Adrangi's Figure 1, Adrangi's LAN 140 connects a "plurality of clients" (Adrangi, column 1, line 14) and a cache server 115. Therefore, Adrangi's LAN 140 is

very different than either a public VLAN or private VLAN and is not an internal element of a single edge POP.

Lastly, as mentioned earlier, combining all of the components of Applicants' edge node in a single computer is a significant engineering challenge, described in some detail on pages 52 through 55 of Applicants' specification, that would not have been obvious to one of ordinary skill in the art. Adrangi does not disclose the detailed design for an edge node, let alone one that is implemented in a single computer.

Therefore, because Adrangi fails to disclose both a private VLAN with a one-way connection to a satellite content distribution network and a public VLAN, let alone as internal elements of an edge node implemented on a single computer, Applicants respectfully submit that claim 1 should be reconsidered.

The Examiner has rejected claims 2 and 3, stating that Adrangi teaches all the limitations as applied to each of claims 2 and 3. With respect to claim 2, "he further teaches a VPN connecting the public VLAN to the private VLAN (column 4, lines 29-51)." With respect to claim 3, "he further teaches means wherein the VPN allows access to the private VLAN from a remote location (column 4, lines 29-51)." As with claim 1, the private and public VLAN's of the present invention are <u>internal</u> to the edge node. Consequently Applicants' VPN is internal to the edge node as well, One end of it is the public VLAN, while the other end is the private VLAN as connected through firewall/VPN 530 in Figure 7 of Applicants' specification, reproduced above. Adrangi's VPN is fundamentally different in that it is "administered from the data centers" (Adrangi, column 4, line 53), and, as mentioned above, he discloses no connection to a public or private VLAN. Furthermore, this claim depends from claim 1, and would not

have been obvious for the same reasons that claim 1 would not have been obvious.

Therefore, Applicants respectfully submit that the rejection of claims 2 and 3 should be withdrawn.

With respect to claim 4, the Examiner asserts that:

"Adrangi teaches an edge node that received content from a network operations center (NOC) via a satellite broadcast link and distributes it to a last mile service provider, the edge node comprising:
  a. A processor that executes code for serving both live and non-live content (column 2, lines 39-49, a group of network servers).
  b. A satellite interface, connected to the processor, that receives content from the satellite link (column 4, lines 29-51; column 11, lines 12-20).
  c. A wire network interface, connected to the processor, for transmitting content to the last mile service provider (column 2, lines 30-58; column 11, lines 12-20).
  d. Where the processor, satellite interface, and wire network interface exist in a single personal computer (column 2, lines 30-58; column 11, lines 12-20)."

In his analysis, the Examiner has cited the same passages in Adrangi as he did for claim 1. However, many of the same differences between Applicants' claim 1 and Adrangi apply for claim 4.

With respect to a satellite interface to receive content from a satellite link, the Examiner has cited Adrangi's column 4, lines 29-51 and column 1, lines 12-20. The first of these makes no mention regarding a satellite interface, let alone a satellite content distribution network as in the preamble of Applicants' currently amended claim 4. As mentioned earlier, Adrangi does not disclose such a dedicated network anywhere and instead, includes the Internet which is clearly a public network and, quite obviously, is not equivalent to a private satellite network. The second cited passage refers to an external LAN, not to either a satellite interface or an internal wire network interface. Lastly, nothing in Adrangi suggests an implementation of an edge node on a single
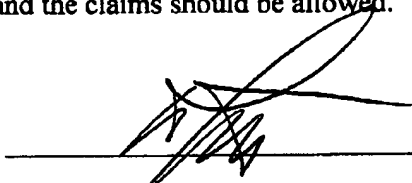
computer, let alone with the composition of claim 4. Therefore, Applicants respectfully submit that claim 4 should be reconsidered.

Claims 5 -12 all depend from either claim 1 or claim 4 and would not have been obvious for the same reasons that claims 1 and 4 would not have been obvious. Therefore, Applicants respectfully request that the rejections of claims 5-12 have been overcome and should be withdrawn.

Conclusion

For the foregoing reasons, Applicants submit that the Examiner's rejection the claimed invention was incorrect and the claims should be allowed.

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